GOVERNMENT OF INDIA
SCIENCE AND TECHNOLOGY
LOK SABHA

STARRED QUESTION NO:143
ANSWERED ON:26.07.2017
Commercial Launch of Technological Products
Ninama Shri Manshankar;Singh Shri Bharat

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether science and technology institutes have commercially launched their technological products in the market during the last three years and if so, the details thereof;

(b) whether any special steps have been taken by the Government to encourage research projects to provide commercial benefits to the scientists and if so, the details thereof; and

(c) whether the Government has launched or proposes to launch any product with the collaboration of research institutions of foreign countries and if so, the details thereof?

Answer

MINISTER FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTRY OF EARTH SCIENCES
(DR. HARSH VARDHAN)

(a) to (c): A statement is laid on the Table of the House.

STATEMENT AS REFERRED IN REPLY TO PARTS (a) TO (c) OF LOK SABHA STARRED QUESTION NO.143 FOR 26/07/2017 REGARDING COMMERCIAL LAUNCH OF TECHNOLOGICAL PRODUCTS

(a) Yes, Madam. The science and technology institutes under the Ministry of Science and Technology have commercially launched 129 technological products in the market during the last three years. Of these, some examples are anti-diabetic drug BGR-34, ROTAVAC Vaccine, dengue diagnostic kits, wheat and soybean varieties, nanotechnology-based antimicrobial and self-cleaning textiles, solar power tree and small tractor Krishishakti. The full list is at Appendix-I.
In addition, 32 products have also been commercialized based on indigenous technologies through the financial assistance provided by the Technology Development Board (TDB) and Biotechnology Industry Research Assistance Council (BIRAC) to Indian industry.
(b) Yes, Madam. The Council of Scientific and Industrial Research (CSIR) and the Department of Biotechnology (DBT) have guidelines in place for incentivizing scientists for undertaking commercially-oriented research. These incentives include sharing of proceeds with scientists from sponsored projects, consultancy projects, technical service projects and premia and royalty received from the industry, allowing the scientists to have an equity stake in scientific enterprises/spin-offs while in professional employment with their parent institutions, mobility of scientists between industry and institutions and other such enabling mechanisms. Some of the autonomous institutions under the Department of Science and Technology (DST) have also evolved similar guidelines.
(c) Yes, Madam. The Ministry has active Science and Technology Cooperation Programmes with over 40 countries. In recent times, there has been a greater push for technology development with the participation of research institutions and industries from both sides. Some examples of this are Indo-US and, more recently, Indo-German and Indo-Israel programmes. 16 products have so far resulted from the Indo-US programmes. A list of these products is at Appendix-II.
APPENDIX-I

Sr. No. Details of the product Company Name
1. BGR-34 - Herbal Formulation for Diabetes Management (NBRMAP) Jointly developed by NBRI & CIMAP Product is poly-herbal and hypoglycemic in nature M/s AIMIL Pharmaceuticals Ltd., New Delhi
2. Vaccine
ROTAVACÂ®
Can be safely co-administered with three doses of pentavalent vaccine and OPV without diminishing an infant's serum antibody responses to each component of these vaccines. Also well tolerated when administered along with the routine childhood vaccines at 6, 10 and 14 weeks of age. Bharat Biotech
3. Process for Gluteradehyde treated bovine pericardium
Developed process to manufacturea patch from bovine pericardium (covering of the heart) for the repair of the outlet of the right ventricle of the heart, in children born with anomalies of the heart. G Surgiwear Ltd. Rasoolpur, Uttar Pradesh
4. Dengue Diagnostic Kits
Dengue day 1 TEST,
Diagnos Dengue card,
Advantage Dengue NS1 Ag Card,
Dengue NS1Antigen FP test,
Dengue IgG Microlisa ,
Dengue IgM Microlisa ,
Dengue NS1 Ag Microlisa. J.Mitraand Co.
5. CELIAC CARD

Technology for a Rapid Diagnosis of Celiac Disease(CD) inhuman J. Mitraand Co.
6. Blood / IV fluid warming system, infant warmer −bassinet & infant warmer −wrapper(License agreement to be made within 3 months)
To raise the temperature of fluids administered to the patient at normal body temperature to prevent hypothermia. The system consists a blood bag warming chamber and an inline tube warming cartridge having infrared light emitting diodes.
Two variants of infant warmers −bassinet and wrapper were developed for maintain the core body temperature of 370C for premature born babies. The warmers are light weight and battery operated and consists of infrared light emitting diodes HLL Lifecare Pvt. Ltd. Thiruvanathapuram, Kerala.
7. Process for preparation of extracellular matrix scaffolds from mammalian cholecyst/ jejunum/urinary-bladder
Tissue engineering scaffolds of animal origin, prepared out of extracellular matrices of organs/tissues of heterogenic.
Xenogenic origin for treating a variety of disease. These scaffolds have applications for fabricating wounds healing skin-grafts, cornea-repair graft and hernia repair graft. Optimus life sciences, Trivendrum, Kerala
8. Rapid diagnostic kit with antibiogram for urinary tract infections
Developed a rapid kit for detection of UTI and the same can be used in a normal health centre facility where there are no sophisticated laboratory and trained microbiologists. This also gives an antibiogram which would also aid the treatment. Agappe Diagnostics Ltd., Mumbai, Maharashtra
9. Wheat variety MACS 6478 Central Subcommittee on Crop Standards
10. Soybean variety MACS 1407 Cultivation in the states of Assam, West Bengal, Jharkhand, Chhattisgarh and North Eastern states
11. Bore Sighting System (BSS)
BSS is custom designed for LCA-Tejas (AF). The technology is strategic in nature and has to be custom designed for each aircraft platform to ensure correct harmonization of HUD and similar M/s Bharat Electronics Ltd., Panchkula

12. Electronic Stethoscope
Can detect very weak sound of mechanical run back timers & electronic timing system in IEDs. The instrument is highly useful for National Security Guards/Security Agencies, Indian Army, para-military forces and State Police Services
M/s Security Defence System, Baddi (HP)
13. BPCL LPG Sweetening Catalyst
Applicable in conventional & fiber-film sweetening processes M/s Lona Industries, Mumbai

M/s Reliance Industries Ltd. (RIL), Jamnagar
14. High Purity Benzene and U.S. Grade Gasoline from C6 Heart Cut of FCC Gasoline M/s Reliance Industries Ltd. (RIL), Jamnagar
15. Wax De-oiling Technology for Production of Paraffin and Microcrystalline Waxes
Increased the refinery profitability in terms of Gross Refinery Margins (GRM) US $ 0.53 per barrel (FY 2015-16), cut down wax import by 50 per cent and saved foreign exchange of the order of Rs 300 crores/annum.
M/s Numaligarh Refinery Limited (NRL) Assam
16. 20 HP Tractor (Small Tractor 'KrishiShakti')
Cheaper and suitable for medium and small farmers. The standard PTO can be used for operating threshers, pumps and other attachments like Rotillor and Combine Harvester. The unique characteristics of the design are full fledged automatic hydraulic system and optimum control location. M/s Singha Components (P) Ltd., Howrah,
17. Plasma Disposal of Plastic Waste & Generation of Syngas
Volume reduction of the waste streams, Byproduct Syngas is a clean fuel
M/s Positronics India, Kolkata

18. Terafil red clay water filtration media (disc) for use in domestic and community size filters
Low cost terracotta water filtration candle,Gravity flow type household filters and community size constructed units/designs M/s Sakshi Unique Rural Enterprise Pvt. Ltd., Maharashtra

M/s Ecosolutions, New Delhi

M/s Chief Conservator of Forests, Maharastra

M/s EPP Composites Pvt. Ltd., Rajkot

M/s Tanu Solutions Pvt. Ltd., Ahmedabad

M/s JiwanJyoti Enterprises, Singhbhum

M/s Tanshi Exim Pvt. Ltd., Raipur

M/s Aasita Industries, Bhopal

M/s APC Water Solutions, Indore

M/s Patel Filters Infrastructure, Anand

M/s Sustainable Environment & Ecological Development Society (SEEDS), New Delhi

M/s Addl. Principal Chief Conservator of Forests, Raipur

M/s Jimpex Bio-Technology, Gandhinagar

M/s Granduer Business Solutions (GBS) Pvt. Ltd., New Delhi

M/s Amrock, Ahmedabad,
M/s SB Equipments, Jhajhar

M/s Sara Healthcare Pvt. Ltd., Delhi.
M/s Shrinathji Chemicals, Raisen,

19. Comprehensive pipeline for diagnosis of mitochondrial diseases using next-generation sequencing technology
A diagnostics tool using Genomics and useful for geneticists and neurologists Eurofins Clinical Genetics India Pvt. Limited, Bangalore
20. Technology for Revamp of Visbreaking Unit (Advanced)

Modified technology produces higher yield pattern and improved product quality. Major improvements are in the VB Naphtha and VB Gas oil yields.
M/s Haldia, Refinery, IOCL

M/s Mathura Refinery, IOCL
21. Energy Management System
The system is highly useful for better utilisation of energy in industry, energy conservation, provide smooth operation and ensure safety for both operating personnel and environment. It measures and displays the electrical energy consumption of each load / feeder, measures & displays physical parameters like Temperature, pressure, Steam flow, Compressed air flow, Steam Consumption etc. and calculates the Specific energy consumption (SEC), Maximum demand and generates control signals for taking appropriate actions M/s Smart Metering Energy Solutions LLP, Panchkula

M/s Industrial Controls & Drives (India) Pvt Ltd, Chennai

M/s Vantedge IT Solutions, Bengaluru
22. Demonstration of process knowhow for the preparation of policosanol from Rice Bran Wax. M/s. RL Agro Industries., New Delhi
23. Development of process knowhow for the isolation of FFA free crystals oryzanol from oryzanol concentrate. M/s A.P. Organics Ltd., Punjab
24. Anti-Arthritis Formulation M/s Kudos Laboratories India Ltd, New Delhi
25. Pain relieving oil M/s Pirinc Pharma, New Delhi
M/s Kolar Point works Bhopal
26. Nanosilver based textile finishes for Antibacterial applications
Stable nano-silver suspensions with a particle size of 10-50nm by a chemical route was successfully synthesized.
N9 silver for antimicrobial textiles is being used by Marks &Spencers, Colour Plus, Wrangler and Walmart as an ingredient brand in their products. These antimicrobial textiles are highly wash durable, provide anti-odour property and render a fresh and hygienic feel to the fabric. Resil Chemicals Pvt. Ltd, Bangalore
27. Nano Titaniumdioxide based textile finishes for self cleaning textiles
Nano titania in modified novel morphologies and compositions having high photocatalytic activity suitable for applying on textile surfaces were developed to impart self-cleaning property to the fabrics. Resil Chemicals Pvt. Ltd, Bangalore
28. Economical Production of Highly Porous Metal Organic Framework (MOF) from Zinc Scrap
The present process/technology which is on the concept of "from waste to wealth" offers to recover high cost end-product (Zif-8) from battery waste (electrode powder) and other zinc scrap. M/s Intelligent Materials Pvt. Ltd., Chandigarh

29. Manufacture of cold setting fly ash building bricks
Geoploymer technology for making fly ash/red mud construction material M/s Next Gen Tech Implex Ltd., Patna
M/s Bhatta Fly Ash Bricks, Bhubaneswar
M/s Eco Build Industry, Bthoor, Kanpur
M/s Eco Brick Industry, Hisar, Haryana
M/s Reliable Industries, Cuttack, Odisha
M/s Shri ShyamUdyog, Jhajjar, Haryana
30. Solar Power Tree
Gives more solar power compared to conventional SPV layout consuming only a fraction of land surface for same power. Holds the panels in a phyllotactic fashion to collect optimum sun. Even the paddy lands, agro-gardens, roads or parks can be utilized for production of solar power without hampering cultivation and other work. M/s Mineworth Engineering Products Pvt. Ltd., Kolkata

M/s Vibes Solar Solution India LLP, Kolkata
31. Mobile Bridge Inspection Unit
an electro-mechanical device mounted on a truck which provides access to hidden parts of bridges or similar infrastructures for proper inspection M/s Gujarat Apollo Industries Ltd. , Ahmadabad
M/s Gemini Power Hydraulics Pvt. Ltd., Mumbai,
32. MagStar: A portable magnetic hysteresis and Barkhausen emissions based electromagnetic device for non-destructive evaluation of steel structure or components M/s Technofour, Pune
33. Artificial (Hydraulic Knee Joint)
The Hyraulic Knee Joint relates to a body powered prosthesis which provides automatic flexion and extension of the artificial leg. Beneficial to the differently able persons
M/s Oriental Engg. Works (P) Ltd., Yamuna Nagar
34. Ceramic membrane based Technology for removal of arsenic (including the process for media preparation) and iron from ground water
Semi-automatic, user-friendly operating procedure can be operated by even the female members of the community M/s. Victor

Engineering Co, Tinsukia,
M/sPorelDass Water & Effluent Control Pvt. Ltd., Howrah
35. Highly compact reverse osmosis/nanofiltration membrane based water purification systems of 50-150 L/h capacity
Compact water purification technologies suitable for schools, hostels and hospitals M/s. Permionics India Private Limited
36. Hollow fiber membrane preparation
clean drinking water purifiers M/s Technorbital Advanced Materials P. Ltd.
37. Corrosion resistant pozzolana cement (Inhibitors admixed Portland pozzolana cement)
The technology is developed to make corrosion free concrete structures. The concrete's corrosion resistant property is increased by a minimum of five times.
M/s. Protektol Anticorrosives, Chennai
38. High performance moisture compatible corrosion resistant protective coating system
Epoxy based coating system. Phosphate doped polyaniline provides smartness to the coating which cures in presence of moisture M/s. Fosroc Chemical Ltd., Bengaluru
39. Moisture cured systems
Epoxy based coating system M/s. Berger Paints India Limited, Kolkata
40. Smart pH/Conductivity Transmitter
An embedded controller based instrument is very useful for Pollution control departments to monitor the pH and Conductivity on-line M/s. Ion scan Instruments & Services (India) Pvt. Ltd., Chennai
41. Tannin Based Rust Converter
The product can be used in situations where proper cleaning / sand blasting is difficult. M/s. Protektol Anticorrosive, Chennai
42. Completely packaged c-band optical amplifier for cable TV application M/s J2 Optronics Pvt. Ltd., Cochin
43. Low Sodium content Glass Bead technology (SiBNa-9.5)
Composition - 2 with Na2O < 10 wt. % [LOW SODIUM BASE GLASS BEAD COMPOSITION] M/s H & R Johnson (India) Ltd., Mumbai
44. High Sodium content Glass Bead technology (SiBNa-23)
Composition - 3 with Na2O > 20 wt. % but <25 wt. %[HIGH SODIUM BASE GLASS BEAD COMPOSITION] M/s H & R Johnson (India) Ltd., Mumbai
45. Qora (Fecal Incontinence Management System)
It is a novel device for the management of fecal incontinence that can be used across a continuum of care facilities from ICUs to nursing homes. The three different variants of the product have been cleared by US FDA for market launch and are currently being commercialized in select hospitals in India and USA. M/s. Consure Medical Pvt. Ltd, Surat
46. Neobreathe (Neonatal Resuscitation Device)
It is the world's first foot operated resuscitator and is specially designed to be easy to use. M/s. Windmill Health Technologies Pvt. Ltd., Delhi
47. SOHUM (neonatal hearing screening device)
Sohum is a low cost and unique device which uses brainstem evoked audiometry to screen neonates for hearing impairment with high sensitivity and specificity. M/s Sohum Innovation Lab Pvt. Ltd.
48. Quick heal topical cream
Skin wound healing in animals Sihil Pharma
49. ABTCHOICE kit
Quick Identification (in 10-12 hrs) of appropriate antibiotic for treatment of mastitis in animals Genomix Healthcare, Hyderabad
50. EndoMetB B-PB
Novel probiotic multi-strain formula for maintaining healthy micro-flora in bovine reproductive tract. Genomix Healthcare, Hyderabad
51`. Bovine TB Alert Kit
Detection of Tuberculosis in cattle and buffalo Genomix Healthcare, Hyderabad
52. Collagen Beads for Oral Delivery of vaccine
Collagen Beads for Oral Delivery of New Castle disease vaccine Hester Biosciences, Ahmedabad
53. Bovine Platelet Lysate
Used as an alternate complementary therapy for mastitis along with antibiotics Hester Biosciences, Ahmedabad
54. Nano particle based ND Vaccine
Novel New Castle Disease vaccine Hester Biosciences, Ahmedabad
55. Wild TB Alert
Detection of Tuberculosis in wild animals Translational Platform for Veterinary Biologicals, Chennai
56. Portable Incubator
Static temperature control box Endhiram Innovations LLP., Chennai
57. Photolyser
Semi automated, hand held LED based single chanel photolysis device Endhiram Innovations LLP., Chennai
58. LAMP device
Loop-mediated isothermal amplification assay device Endhiram Innovations LLP., Chennai
59. Calcium sulfate cement
Bone filler material in cement form, supplied as powder / liquid for orthopaedic use and periodontal defect management in dentistry. It has bioactive and resorbing properties helping remodelbone defects G Surgiwear Ltd. Rasoolpur, Uttar Pradesh
60. Poly-Vinyl-Alcohal sponge
Designed for use in ophthalmic surgeries such as cataract, Intra ocular lens replacement, glaucoma etc. to absorb blood and saline, in less than a minute G Surgiwear Ltd. Rasoolpur, Uttar Pradesh
61. Fibrin sealant
A plasma derived biological tissue sealant comprising of mainly fibrinogen and thrombin were developed as surgical hemostatic/adhesive material ZumHeilen Health Care Pvt. Ltd. Bangalore, Karnataka
62. Silica aerogel flexible sheets
Technology for the production of Silica aerogel flexible sheets having fire retardant, hydrophobic, breathable properties with other desirable features required for industrial thermal insulation applications were developed

Bluefox Aerogel Development and Applications LLP , Isolant Industrial Insulation Pvt Ltd and Aerogel One ltd, Gujrat
63. Synthetic Milk Tester M/s Shree Kamadhenu Electronics Pvt Ltd, Anand
64. Nanomatrix for delivery of pheromone
The management of red palm weevil- insect that significantly damage coconut plants. Hyderabad based company
65. Nanomatrix for delivery of pheromone
The management of rhinoceros beetle-insect that significantly damage coconut plants. Hyderabad based company
66. Technology for fluid dynamics and heat transfer simulations.
Transferred a set of software and software codes. Sankhyasutra Labs Pvt Ltd
67. Developed Monoclonal Antibodies Against NPM1 and Acetylated NPM1, and Process thereof.
The product developed using this technology use in Immunohistochemistry (Paraffin) and Western Blotting and Immunohistochemistry for the detection of Acetylated Nucleophomin. Abexome Biosciences Pvt Ltd
68. CTK7A and Methods Thereof
To inhibit Histone Acetyltransferases. Merck Group
69. Strata Movement Warning System
Prediction of roof fall, safety for man and machine M/s. Pranay Enterprises, Hyderabad
70. Improved Iron Removal Plant
Naturally available sand and gravels used for removal, No electric power requirement- Implementable in remote villages
M/s Joint Enterprise Engg. Co., Durgapur
71. Pneumatic Precision Planter for vegetables
Direct planting/seeding of small/irregular vegetable seeds
M/s Ashlyn Chemunnoor Instruments (P) Ltd., Thrissur
72. Patchfill Pothole Repair Machine
instant repairing machine suitable of roads in rural areas M/s. Supreme Bituchem India Pvt. Ltd., Maharashtra

M/s. TorchtarMembrance&Bituchem Products Pvt. Ltd, New Delhi

M/s. Leofab Projects Pvt. Ltd, Odisha

M/s. SM Engineers Pvt. Ltd, Guwahati

M/s Pioneer Industries pvt. Ltd.
73. Development of Viscosity Grade Bitumen "VG-40"
Newly developed VG-40 & VG-40+ give bituminous mixes resistant to rutting, fatigue and thermal cracking. M/s Tiki Tar Industries ltd., Badodara
M/s ART Thermosets, Kanpur
M/s Juno Bitumix, Noida
M/s Jalnidhi Bitumen Specialities Private Limited, Kolkata
74. Digital Grain Moisture Analyser (DGMA)
The technology is highly useful for Mandis, FCI godown, food processing plants, rice shellers etc.
M/s KC Engineers, Ambala Cantt
75. Air-Assisted Electrostatic Sprayer for Crops
Electrostatic spraying technology offers a very favorable approach to increase pesticide droplet deposition onto biological surfaces of crops and orchards and provides pesticide bio-efficacy, uniform deposition, maximum canopy coverage and liquid pest to reach the hidden areas and underside of the target M/s Jagatsukh Industries, Ludhiana
76. Diffraction Lloyd Mirror Interferometer
In this new interferometer, a diffracting element is used to diffract the light from the point source and a Lloyd's mirror is used to generate interference fringes by overlapping two portions of the diffracted wavefront. It is the only interferometer worldwide which can generate straight, conic and circular fringes in single interferogram M/s Maffick Instruments, Ambala City
77. Postural Stability System
Postural stability is achieved by maintaining an upright body alignment. The developed foot pressure sensor is used for assessing balance stability in spasticity scores of ankle dorsiflexion and planar flexion
M/s Medicaid Systems, Chandigarh
78. Induction Motor Efficiency Monitoring System (IMEMS)
The IMEMS determines the operating efficiency of motors without removing the motors from the field and without the need for measuring the output power or torque and can be at its Best Operating Point (BOP).
M/s Beta Technologies India Pvt Ltd, Coimbatore

M/s Industrial Controls & Drives (India) Pvt Ltd, Chennai
79. Myo-Meter
Myo-meter is a handy device which is used to find out the optimum location of the EMG electrodes placement for the proper functioning of the myoelectric arm. It is a multi-use device for medical applications M/s LM Health Care, Panchkula
80 Foot Controlled Water Tap
Foot operated device highly useful in places like hospitals, public toilets & laboratories which are prone to secondary mode of germ transfer and also control wastage of water. M/s Aqua Systems Pvt. Ltd., Mohali
81. Virtual Intelligent Technique for Rehabilitation of Persons with Motor Disability
The virtual rehabilitation environments are designed using Microsoft Kinect V2 Camera, Wii Balance Board, Leap Motion sensor and other indigenously developed dedicated sensors M/s Walnut Medical Pvt. Ltd, Ambala City

82. Providing planting material consisting of, "aspetic cultures of apple root stocks of the various varieties MM 106, M-111, M-7, M-793, EM9"
In-vitro generated virus tested planting material is free from bacterial and fungal infections, and is with minimal viral infections (below

detection limit against the tested viruses). Fruit or flower production from virus tested planting material is better and of high quality for better market value.
M/s. Pushp Biotech &Farms, Dist.Solan,

SMS Horticulture Model Floriculture Centre, Shimla.
83. Demonstration of process knowhow for enzymatic degumming and dewaxing of rice bran oil on 50 TPD commercial plant
Enzymatic degumming and dewaxing of rice bran oil
M/s. MuezHest India Pvt. Ltd., Mumbai
84. Fatty alcohol mixture from Rice bran wax M/s. Viva Agrotech Pvt. Ltd., New Delhi

M/s. Tirumala Oil Chem India Pvt. Ltd., Hyderabad
85. Development of process knowhow for rat glue pad M/s. Hi Tech Pest Control, Bangalore
86. Development of process knowhow for preparation of Triacontanol from rice bran wax. M/s. Pushpa J Shah, Gujarat
87. Process development and demonstration for the preparation of Laurly Alcohol Sulfosuccinate, Laurly Alcohol EthoxylateSulfosuccinate and Sulfosuccinated Castor oil. M/s. Balmer Lawrie & Co. Ltd., Chennai
88. Environment friendly biomass cook stove (Harsha) Family and community sizes M/s Sakshi Unique Rural Enterprise Pvt. Ltd., Maharashtra
89. Multi-purpose biomass operated drier for vegetables and spices Low cost agricultural implement M/s Perfect Research Engg. Bhubaneswar,
90. Queen coal/wood fired pottery kiln
For sintering of terracotta red clay water filtration candles M/s Gujarat MultikamKalakari& Rural Technology Institute, Gujarat
M/s Shristi, New Delhi
91. Domestic and community scale GVK series cooking stoves Improved biomass operated cooking solution with value added services M/s Sai GrameenUdyog, Faridabad
M/s UnicusEngg. Pvt. Ltd., Bhubaneswar
M/s Perfect Research, Bhubaneswar
M/s Access GrameenMahilaUdyog, Duruguda, Koraput, Odisha
M/s Gram Tarang Employability Training Services, Bhubaneswar
92. Improved Anaerobic digester for treating Household Organic waste M/s Mailhem IKOS Environment PvtLtd, Pune

93. Process for the beneficiation of ilmenite
Environment friendly process for Metallisation of iron oxides present in ilmenite using suitable coal as the reductants in a rotary kiln M/s. V. V. Minerals Ltd.
Tirunelveli, Tamilnadu
94. Liquid Deodorant Cleaner M/s Ethereal Aromatics, Guwahati
M/s SAPMG, Agartala
95. Analysis, Designing and Structural Detailing of G+3 and G+1 Reinforced Concrete Building using EPS.
Novel innovative technology for making disaster resistant lightweight prefabricated building systems using EPS (Expanded Polystyrene Core) Panels M/s. Consortium Transmission Systems Pvt. Ltd., Hyderabad
96. Dalbergiasisso plant extract
The crude extract derived from the terrestrial plant herbs Dalbergiasisso (CSIR-CDRI Plant Extract named as A-4744) showing osteoprotective and bone anabolic effects. M/sPharmanza Herbal Pvt. Ltd., Dharmaj, Gujarat

97. Mosquito Repellent Lotion M/s. BhartiyaAgrow Pharma Pvt. Ltd. .Kanpur
98. Floor disinfectant M/s. BhartiyaAgrow Pharma Pvt. Ltd. , Kanpur
99. Mosquito repellent spray M/s. BhartiyaAgrow Pharma Pvt. Ltd. , Kanpur
100. CIM-Arogya and its cultivation technology M/s. IPCA Laboratory, Ratlam (MP)
101. Instant Traditional food: Sambar and 7 other food M/s Dhanush Commercial Corporation Bengaluru
102. RTS fruit juice & beverage Sri. Mohan Y. Sullad, C/o S.R. Chetti, , Bagalkot
103. Ginger Paste M/s Zabdiel Group, Wayanad
`04. Ready mix: Jamun M/s Nilon's Enterprises Private Limited, Pune
105. Production of turmeric powder from fresh turmeric rhizome M/s Nani Agro Foods (P) Ltd., Erode
106. Virgin Coconut Oil M/s Shridhareswara Coconut Products, Mysore
107. High Protein Biscuits M/s. Abhinav Food Products, Tinsukia
108. Rural based biotechnological production of Spirulina Mr. P. Kodeeswaran, Parishya-Spy Estates, Erode

109. Instant Gravy Mixes: Dehydrated (11 Formulations) M/s Kalpana''s Kitchen, Hebbal Industrial Area, Mysore
110. Groundnut (Peanut) Butter M/s V M Foods, Madurai
111. Value added products from figs (F.c.L) M/s Ajfan Foods, Bengaluru
112. Ginger Beverage M/s Kemps Pet Industries Industrial Estate HOSPET
113. Actinomycetes strain
(Gene bank accession KT892738) with plant growth promotion activity M/s Green Harvest (India) Biotech Pvt. Ltd., Guwahati.
114. Walker with adjustable legs Kaviraa Solutions, Nagpur
115. Manual and motorized milking Machine Aviva EquipmentsPvt. Ltd, B'lore
116. Lacquer finished wooden artefact Gogalgai Toys LLP, Mumbai
117. Technologies for disability, rehabilitation and related uses BhagwanMahaveerViklangSahayataSamiti, Jaipur
118. Pole Pro, a device to climb on electric poles India Innovatix Pvt. Ltd. Ahmedabad
119. Multi tree climber BhumiputraAgri Brigade
120. Baffle system in septic tank GMI ZarhakMoulders Pvt. Ltd. Goa
121. Walnut cracker Rafiq Engineering Works, Anantnag
122. Walnut peeler

123. Tractor operated sugarcane bud and potato planter Guru Nanak Engineering and Agrotech, Aurangabad
124. Kudrat - 9 Wheat variety Balaji Seeds Agritech, Kandwa
125. Adjustable Walker and Crutches Artificial Limbs Manufacturing Corporation of India (ALIMCO), Kanpur
126. Sugarcane Bud Chipper EirazAgriclinic& Agribusiness LLP, Ahmedabad
127. Cow dung Pot Making Machines DIP Technologies, Ahmedabad
128. Mobile garbage collecting device Sarjan Innovations Private Limited, Patan, Gujarat
129. Six herbal nutraceuticle teas; blend of herbs with Kangra tea A company "YUVAN"is setup with BVG, Pune where NIF is technology partner

APPENDIX−II

Product-Oriented Collaborative Research & Development Projects
with Research Institutions of Foreign Countries

Sl.No. Product details Partnering Institutions
India Partner Country
1 "Development of a low-cost, portable auto-refractor".
Aurolab, Madurai PlenOptika, Sommerville, MA, USA
2 "Developing novel biological seed treatments to confer abiotic stress tolerance in crops".
SFPL Crop Life Sciences Pvt. Ltd., Jalna Adaptive Symbiotic Technologies, Seattle, WA, USA
3 "Commercializing a transformational modular roofing solution for low-income urban homes".
Re-Materials, GIDC, Ahmedabad

ITT Inc, Oakland, CA

4 "Transforming arsenic and fluoride crisis in drinking water into an economic enterprise". Rite Water Private Limited,
Nagpur
WIST Inc., Brighton, MA

5 "Handheld forced oscillation device for improved detection and monitoring of airway disease".

CSIR-Institute of Genomics and Integrative Biology, New Delhi

Cognita Labs and Rice University
Houston, Texas
6 "Moving beyond the pavement: affordable mobility for users around the world". Pinnacle Industries Ltd, Indore

GRIT Inc, Cambridge, MA
7 "Jaipur belt (Belt system for body support)".

Newndra Innovations Pvt Ltd, Jaipur
MedSpark LLC, San Luis Obispo, CA
8 "Hand Cranked Rugged and Affordable Defibrillators for low resource settings". Jeevtronics Pvt. Ltd, Karvenagar, Pune Dhurjaty Electronics LLC, NY
9 "Modular diagnosis of cervical cancer utilizing smartphone diagnostics and artificial intelligence". Aindra Systems (P) Ltd, Bangalore

Alexapath LLC
Broolyn, NY

10 "Fetal monitoring tool for grassroots level healthcare workers". Brun Health (P) Ltd, New Delhi Individual,
Berkeley, CA

11 "Wireless sensor based wearable device for heart disease management". Monitra Healthcare (P) Ltd, Gachibowli, Hyderabad
DuPont , Sunnyvale, CA
12 "Digital braille accessibility for the blind made affordable by magnetic actuator technology".
Inceptor Technologies Pvt. Ltd. IIT Bombay, Mumbai Pennsylvania State University, Erie, PA
13 "Low-cost, efficient and portable blood cell counter for point-of-care diagnostics". Pratimesh Labs Pvt. Ltd, IISc., Bangalore
Aline Inc., CA
14 "Millimeter wave transceiver development for high bandwidth secure wireless communication". Astrome Technologies Pvt. Ltd, IISc., Bangalore

AniaraSpaceCom LLC, Princeton,
15 "Lightweight, Ultra-Fast, Next-Generation Magnetic Resonance Imaging (MRI) Scanners".
Voxelgrids Innovations Pvt. Ltd., Bangalore

Superconducting Systems Inc., Billerica
16 "Low-cost, efficient and portable blood cell counter for point-of-care diagnostics". Crimson Healthcare Pvt. Ltd., New Delhi
Ximedica, Providence

****